R E P O R T R E S U M E S

ED 015 347 VT 004 451

ABSTRACTS OF RESEARCH STUDIES IN AGRICULTURAL EDUCATION COMPILED IN 1965-66 IN THE NORTH ATLANTIC REGION.

BY- LOVE, GENE H.

PUB DATE NOV 66

EDRS PRICE MF-$0.25 HC-$1.80 43P.

DESCRIPTORS- *AGRICULTURAL EDUCATION, *EDUCATIONAL RESEARCH, *MASTERS THESES, *DOCTORAL THESES, *ANNOTATED BIBLIOGRAPHIES, NORTH ATLANTIC STATES,

FORTY-TWO DOCTORAL DISSERTATIONS, STAFF STUDIES, AND MASTERS' THESES IN AGRICULTURAL EDUCATION ARE REPORTED IN THE FOLLOWING AREAS -- ADMINISTRATION, AGRICULTURAL PRODUCTION, CAREER CHOICE, CURRICULUM, COMMUNITY COLLEGES, EDUCATIONAL NEEDS, EMPLOYMENT OPPORTUNITIES, EXTENSION EDUCATION, FARMERS, GRADUATE STUDENTS, INNOVATIONS, INTERNATIONAL EDUCATION, OFF-FARM AGRICULTURAL OCCUPATIONS, PUBLIC OPINION, SOCIOECONOMIC INFLUENCES, STUDENT INTERESTS, SUPERVISED FARM PRACTICE, TECHNICAL EDUCATION, VOCATIONAL FOLLOWUP, YOUNG FARMER EDUCATION, AND YOUTH CLUBS. THE PURPOSE, METHOD, AND FINDINGS OF EACH STUDY ARE SUMMARIZED. THE STUDIES ARE ARRANGED ALPHABETICALLY BY AUTHOR. (JM)

ED015347

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ABSTRACTS OF RESEARCH STUDIES IN AGRICULTURAL EDUCATION COMPILED IN 1965-66 IN THE NORTH ATLANTIC REGION

Submitted in the Format of
the Series Known as
Summaries of Studies in Agricultural Education

Prepared by
Gene M. Love, Associate Professor
Department of Agricultural Education
The Pennsylvania State University

for Distribution at the
North Atlantic Regional Research Conference
Rutgers - The State University
November 8-10, 1966

VT004451

AHMAD, S. TUFAIL. Socio-Economic Factors in the Adoption of Agricultural Innovations in Selected Villages of India. Thesis, M.S., 1966, University of Maryland. 199 p. Library, University of Maryland, College Park.

Purpose. -- To ascertain the influences of certain socio-economic and cultural characteristics of villages on the adoption of agricultural innovations. Adoption was defined as the use of certain agricultural innovations in the year of study. The average number of agricultural innovations adopted by the respondents in a village was considered as the rate of adoption of agricultural innovations in that village. The independent variables were certain socio-economic and cultural characteristics of villages, i.e., background, socio-economic levels, attitudinal characteristics, and external exposure of the villages.

Method. -- The study was confined to villages being served by the community development program in the Sheikhpura area (Dist-Mongbyr, Bihar, India). A random sample of eleven of twenty-two villages served by the community development program was selected. From the eleven villages, a random sample of 253 families was chosen. The head of each family was interviewed. Rank order coefficients were used to test for association's, between the adoption of agricultural innovations and the independent variables. When necessary, the anaylsis of variance test was computed to ascertain if the villages differed significantly from each other in terms of the independent variables.

Findings. -- The rate of adoption of agricultural innovations was higher in villages nearer to the source of social change with longer histories of extension work, with smaller populations, and with homogenity (religion). Higher socio-economic status, larger amounts of irrigated land owned, higher income level, higher standard of living, and larger numbers of agricultural equipment were associated with the adoption of larger numbers of agricultural innovations in the villages.

To the degree to which the villages are exposed to the outside world and to new ideas, the rate of adoption of agricultural innovations increased.

The attitudinal characteristics, that is, the moral integration (homogenity of values in religion) and the sacred-ritualistic attitudes within the villages are two other factors which may encourage the adoption of agricultural innovations.

ARNOLD, JAMES B. Personality Characteristics of First-Year 4-H Club Leaders in Maryland. Thesis, M.S., 1966, University of Maryland. 87 p. Library, University of Maryland, College Park.

Purpose. -- To gain a better understanding of certain personality characteristics of volunteer leaders in the 4-H Club program and to relate these personality characteristics to continued service.

Methods. -- The Institute for Personality and Ability Test (IPAT, 16 P.F., Form C) was administered to all volunteer leaders in Maryland who had less than one year of service. N equalled 280 leaders. Scores for each of 16 factors were related to age, sex and education of the respondents. Comparisons were made between characteristics of leaders who did and those who did not continue beyond one year of service. The comparisons were made for the total group and by selected personal variables. Analysis of variance and t-tests were used to determine significant differences between groups.

Findings. -- Of the 16 personality factors identified and measured, the following significant differences were found among the groups and variables compared. (1) Female leaders were more sensitive and effeminate as contrasted to tough, realistic characteristics of males. (2) New leaders under 25 years of age were more enthusiastic and happy-go-lucky than the other groups of new leaders. (3) Leaders over 45 years of age were more self-sufficient and resourceful than the younger groups of leaders. (4) In terms of education, leaders who had continued their education beyond high school showed more intelligence and were more radical in their thinking than the less educated. High school graduates were more shy and timid, and tense and excitable than were either school dropouts or college students. (5) Leaders who continued to serve beyond one year measured higher in confidence and self-security than the non-continuing group. The difference was also observed for the 30-44 year age group. Leaders over 45 years who continued showed higher self-sentiment formation characteristics than those who did not continue.

It was concluded that although significant differences were found among the 4-H leader groups studied, evidence was inconclusive to support the premise that personality characteristics are contributory factors to leader tenure.

BELL, ARTHUR P. Characteristics and Performances of High School Graduates and Non-Graduates in One-Year Programs in the Community College System of Institutions in North Carolina. Thesis, D. Ed., 1966, The Pennsylvania State University. 185 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To compare characteristics and performance of high school graduates and non-graduates who completed one-year programs in the Industrial Education Centers in North Carolina and to determine relationships of characteristics to performance. Four major hypotheses were tested: (1) There are no significant differences in the characteristics of students who were graduated from high school and those who were not graduated. (2) There are no significant differences in the performance of students who were graduated from high school and those who were not graduated. (3) There are no significant relationships between the characteristics and post-high school institution grades of the students. (4) There are no significant relationships between the characteristics and length of time spent in training by the students to complete one-year vocational programs.

Method. -- Twelve post-high school institutions of less than the baccalaureate degree level were selected. The sample included 1,005 students enrolled in thirteen different one-year vocational curriculums. There were 622 high school graduates and 383 non-graduates who enrolled during or after the school year of 1961-62 and who completed their programs prior to January 1965. The data were taken from records on file at the institutions. The .05 level was chosen for tests of significance.

Findings. -- The graduates were younger than the non-graduates. More females than males had graduated from high school. More single students were high school graduates. More students with no military service than those with military service had graduated from high school. The graduates made higher scores on seven of nine aptitudes tested.

The graduates spent less time in training to complete their programs and achieved higher grades. Significant positive correlations between high school grades and post-high school institution grades for both the graduates and non-graduates were found. There were significant positive correlations between mean aptitude test scores and post-high school instituion grades for both the graduates and non-graduates.

The females made higher grades than the males. The married students made higher grades than the single students. There were no signigcant relationships between area of residence, military service, and employment status at time of application for enrollment and grades achieved. More females than males completed their programs in one year. Students with no military service completed their programs in less time than the students with military service. The students not employed at the time of application for enrollment spent less time in training than those employed.

BOARDMAN, EARL L. The Administrative Role of the FFA Executive Secretary. Thesis, M.S., 1966, University of Maryland. 109 p. Library, University of Maryland, College Park.

Purpose. -- To determine the administrative role of the state FFA executive secretary as perceived by executive secretaries and by head state supervisors of vocational agriculture. The ideal and actual roles of the executive secretary were considered for administering both the FFA program and the total vocational agriculture program.

Method. -- Data were secured by mailing a Role Perception Inventory to both position groups. The inventory secured ratings on a six-point scale consisting of twenty administrative functions. The data were sorted and ranked according to the mean scores. Comparisons were made between the ratings for actual and ideal roles as perceived by both position groups.

Findings. -- There were no significant differences in perception between position groups for either the FFA program or for the total vocational agriculture program. There was agreement on the actual role of the FFA executive secretary in regard to the FFA program. Only 1.18 and 1.54 points separated the highest and lowest ranked administrative functions as perceived by state supervisors and executive secretaries, respectively.

There was no significant difference in mean scores between the actual and ideal role of the state FFA executive secretary in administering the FFA program and the total vocational agriculture program as perceived by the two position groups.

With respect to age, years of experience in vocational agriculture and on the state staff, and formal education, there were no significant differences. This was also true regarding time devoted to FFA work and the size of the state staff.

There appeared to be less administrative responsibility for the total vocational agriculture program than for the FFA program. Although, only two states reported their FFA Executive Secretaries did not have at least some responsibility for the majority of the functions.

BUTTON, CHARLES LARRY. Characteristics and Perceptions of Past State FFA Officers in New York. Essay, M. Ed., 1966, Cornell University. 77 p. School of Education, Cornell University, Ithaca.

Purpose. -- (1) To determine what becomes of former state FFA officers and what they have achieved. (2) To determine what former state FFA officers feel were the most important programs or activities offered by the FFA. (3) To determine the perceptions of former state FFA officers as to the future of the FFA or a vocational agriculture club. (4) To summarize findings and present suggestions as to the development of a new vocational agriculture club.

Method. -- A set of criteria was developed to select 20 state FFA officers from a total of 60, for the study. Individuals were selected on the basis of interest. Interest included both promptness of return of questionnaire and of letters or notes attached to the questionnaire which contained additional information. At least one individual from each state FFA office was used. The data collected from 20 former FFA state officers was compiled, analyzed, and summarized. Data included backgrounds, occupations, and achievements.

Findings. -- State FFA officers came primarily from small agricultural communities. The majority of past state FFA officers have continued to live in the communities in which they were born. The major enterprise on the home farms, which averaged 275 acres, was dairy cattle. Over 80 per cent of the state FFA officers were active in five other school activities while 55 per cent were members of National Honor Society. Fifty per cent received post-high school education. Sixty-eight per cent belonged to farm organizations.

Changes in the FFA that were suggested by the 20 selected state FFA officers included: (1) Change the FFA to represent all five areas of study proposed by the new vocational agriculture program and change FFA to Future Agriculturist of America. (2) Use FFA leadership training program and club jacket in the new organization. (3) Provide that membership be open to either sex as long as they are an agriculture student. (4) Allow officers to be elected from the total club membership, depending upon each individual's ability. (5) Provide for the following degrees: Greenhand, Chapter, Group Accomplishment Degree (county level), and Empire Degree (Farmer, Horticulturalist, Mechanic, Conservationist, Agriculturalist).

CLAIBORNE, PAUL. R. A Comparative Study of School and Community Types of 4-H Clubs in Kentucky. Thesis, M.S., 1966, University of Maryland. 104 p. Library, University of Maryland, College Park.

Purpose. -- To determine the relative effectiveness of community-type and school-type 4-H Clubs in Kentucky.

Methods. -- Data were obtained by use of a mailed questionnaire from agents and leaders in twelve counties in Kentucky. The counties that were selected to be in the sample had a minimum of seven clubs of each type. Different data-collecting devices were sent to agents and leaders. The questionnaires were designed to get general information about the total 4-H Club program in the counties from the agents, and specific information about the 4-H leader and the activities of the club from the leaders.

All twelve agents who were sent questionnaires replied. Data-collection instruments were sent to 168 4-H Club leaders and 152 or 90.4 per cent of them were returned and used in the study. Chi square was used to test the significances of differences between the two types of clubs as measured by the dependent variables.

Findings. -- It was found that school clubs were more effective than community clubs in: enrollment of a larger number of members, re-enrollment of a higher percentage of members the second and third years, and larger number of years of education of club leaders.

Community clubs were more effective than school clubs in the following: securing leaders, attendance of leaders at training meetings, frequency and length of club meetings, completion and exhibition of projects on the county level, participation in character-building activities, and enrollment of older 4-H Club members.

COBB, ROBERT A. Factors Associated with Curriculum Choice by Students in Selected Maryland High Schools. Thesis, M.S., 1966, University of Maryland. 77 p. Library, University of Maryland, College Park.

Purpose. -- To determine which peoples and what factors influence pupils' choices of curriculums in high school.

Methods. -- A survey for was designed and administered by the researcher to ninth and twelfth grade pupils in eight Maryland high schools. Chi square was used to test the significance of observed differences.

Findings. -- The pupils rated the influence of selected people on their choices of curriculums in the following rank order: themselves, others (mostly aunts, uncles, and grandparents), mothers, teachers, fathers, classmates and friends, guidance counselors, brothers and sisters, upper classmates, and principals. English teachers were found to have a strong influence on the curriculum choice of pupils in all four curricula. The pupils' ratings of factors influencing curriculum choice resulted in the following rank order listing: personal interest, useful in future work, diploma requirements, past grades, difficulty of subjects, pupils they will be associated with, teacher's skill, guidance tests, needed for college entrance and scheduling conflicts.

The pupils in the Academic curriculum were characterized by higher parental educational attainment, a greater self-concept of ability, a greater self-evaluation of status or prestige, a larger percentage of grades in the upper third of their class, and greater parental interest in their education than the pupils in the Commercial, Vocational, and General curriculums. The rank order of curriculums as rated by the pupils for difficulty and status was Academic, Commercial, Vocational, and General. Half again as many pupils planned to attend college as did attend from last year's graduating class.

COLE, CHARLES D. Benefits Accuring from the Organization of a State Young Farmers Association in Vocational Agriculture. Thesis, M.S., 1966, West Virginia University. 66 p. Library, West Virginia University, Morgantown.

Purpose. -- (1) To determine the benefits accuring from a state young farmers association, and (2) to develop the criteria for establishing a state young farmers association.

Method. -- Data were called by means of: (1) an opinionnaire directed to all vocational agriculture teachers in West Virginia teaching one or more young farmer classes, (2) a letter to all state supervisors of vocational agriculture in the United States, and (3) a review of the literature concerning state young farmers associations. Twenty-two or 69 per cent of the teachers completed the opinionnaire, thirty-five or 70 per cent of the supervisors responded to the letter, and nineteen references were cited in the study.

Findings. -- There is strong interest in favor of organizing a state young farmers association in West Virginia. Eighty-one per cent of the teachers who responded to opinionnaires were in favor or organizing a state association. Fifty-four per cent of their young farmers were also interested. Teachers were not satisfied with the present status of the young farmer phase of vocational agriculture in West Virginia.

Approximately 25 per cent of the responding state supervisors of vocational agriculture reported a state young farmers association existing in their respective states.

The criteria for organizing a state young farmers association includes: (1) development of a constitution and by-laws to govern and protect the association and its affiliated members; and (2) development of a program of work to carry out its purposes through appropriate activities. A proposed criteria for organizing a West Virginia Young Farmers Association was developed.

COOK, JAMES L. Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education. Thesis, D.Ed., 1965, The Pennsylvania State University. 127 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To evaluate three levels of farm account and record keeping systems when used to provide facts and knowledge that would assist in making decisions, (2) to determine if selected farm account and record keeping systems could be changed, expanded or supplemented to include the data necessary for farm business analysis and farm planning, (3) to discover relationships among groups of farmers by level of accounts and records when tested by several measures of the farmer, and (4) to discover relationships among groups of farmers by level of accounts and records when tested by several measures of the farm.

Method. -- The study was completed in two phases. During the first phase, all available information from farm accounts and records for three selected farms was used to calculate a partial budget for each enterprise in use on each farm. In addition, a linear programming model was constructed for each farm. Data and information not available from the records were required. The sources of the additional data were recorded and included in the study.

For the second phase, all of the young farmer class members of one Young Farmer Association with responsibility for keeping farm accounts and records were divided into three groups on the basis of the record keeping system they employed for the year 1964. The groups used high, medium or low levels of record keeping. A random sample of fifteen farmers was chosen from each group. Each farmer was interviewed individually to obtain the criterion measure data. Six instruments were used during the interviews. The study was designed to determine significant differences and relationships among the groups of farmers. The statistical treatments of analysis of variance, covariance, correlation and the Tukey Test were used.

Findings. -- The results indicated that (1) the high level of farm account and record keeping system provided significantly more of the input-output data and production functions needed to construct a budget for each enterprise in use on the farm and (2) the single entry record keeping systems used could be expanded, changed or supplemented to include the data needed to complete a farm business analysis and to construct a partial budget for each enterprise in use on the farm.

There were differences anong groups of farmers using three levels of farm account and record keeping systems when tested by several measures of the farmer and by several measures of the farm. The measures of the farmer for which the scores of the men in the high level record keeping group were significantly higher were leadership experience, farm business involvement, farm management test score and education completed. The measures of the farm for which the scores of the men in the high level record keeping group were significantly higher were months of labor, number of cows, milk sold per year, gross farm income and net farm income.

CORMAN, ALBERT R. The Employment Status of Male High School Graduates of Fulton County Schools from 1956 to 1964. Paper, M. Ed., 1965, The Pennsylvania State University. 57 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To complete an employment survey of male graduates of the four high schools of Fulton County, Pennsylvania, and to compare the graduates of agricultural curriculums to graduates of non-agricultural curriculums during alternate years from 1956 to 1964 for selected relationships.

Method. -- A questionnaire was developed to secure background information on the employment status of the male graduates of the high schools of Fulton County, Pennsylvania. The questionnaire was used to record information for male graduates obtained by personal interview when possible. Identical questionnaires were sent to those whom it was not possible to contact individually. The replies were organized into percentages in tabular form for evaluation. Each table was developed around a single question to compare graduates of agricultural curriculums with graduates of non-agricultural curriculums.

Findings. -- The results of the study show that there is positive evidence that graduates of agricultural curriculums in Fulton County, Pennsylvania, in alternate years from 1956 to 1964 when surveyed in 1965, had a higher rate of employment, a greater percentage of full-time employment, tended to hold their present employment positions for a longer period of time, were employed in more jobs requiring highly-skilled workers, had more opportunity for advancement, and held a greater number of jobs in Fulton County than did graduates of non-agricultural curriculums.

DEBERARDINIS, JOHN T. Social Adjustment of 4-H Members in the Connecticut State Award Selection Process. Thesis, M.S., 1966, University of Maryland. 96 p. Library, University of Maryland, College Park.

Purpose. -- To explore the extent to which 4-H Club members, who were relatively well adjusted were selected for National 4-H events. The study was further concerned with other factors which were related to social adjustment and their effect upon the selection of the delegates.

Method. -- Three hypotheses were developed from social role theory and a review of the literature. These were tested using data from questionnaires returned by more than 92 per cent of 310 Connecticut 4-H Club members. Relevant statistical tools were used to present the data. These included tests of significance which were applied to the sample data, and descriptive statistics which were used with the non-sampled data.

Findings. -- The Connecticut selection process for delegates generally complied with objectives to fulfill the social needs of youth. The two aspects of social role theory, which provided the theorectical bases for the selections, were supported. Factors in addition to social adjustment were apparently considered in the selection process. Certain personal and social characteristics should be recognized as factors which could possibly affect social adjustment. Certain personal and social characteristics should be recognized as factors which could possibly affect the selection of delegates.

DOUGLAS, G. STUART. A Survey of Non-farm Agricultural Occupations in Southern Washington County to Determine Employment Opportunities and High School Curriculum Needs. Thesis, M.S., 1966, University of Rhode Island. 63 p. Library, University of Rhode Island, Kingston.

Purpose. -- (1) To determine off-farm agricultural employment opportunities in southern Washington County, (2) To determine competencies needed in the agricultural occupations, and (3) To provide data for curriculum adjustments in agricultural education at the high school level.

Method. -- A list was compiled of 133 area businesses, services, and agencies in which a knowledge of agriculture was believed to be useful or helpful. The following eight categories were selected for inclusion in the study: Horticultural Sales and Services; Logging, Lumber, and Building Materials; Food Processing and Distribution; Farm Power and Equipment; Small Engines Sales and Service; Wildlife and Recreation; Farm and Garden Supplies; and Miscellaneous Agriculture. The investigator collected the data by personal interviews with officials of twenty firms using not less than a ten per cent random sample drawn from each of the eight categories.

Findings. -- The study identified 306 non-farm agricultural workers who required knowledge, skills, and competencies in agriculture. Approximately fifty per cent of the labor force needed a high school education while twenty-four per cent needed either technical or college level education. Employers showed little interest in prospective employees who had not completed high school.

An increase of approximately 33 per cent in full-time employment and a 63 per cent increase in part-time employment can be expected in the next five years in this geographical area. Three of the largest areas of off-farm employment were found to be in the Food Processing and Distribution, Horticultural Sales and Service, and Wildlife and Recreation. The firms in these areas accounted for more than one-half of all the workers employed in the eight occupational families.

Agricultural programs should be developed on the high school level in the areas of agricultural business, mechanics, plant sciences and recreation. Inservice training programs need to be considered for teachers of agriculture to acquaint them with the educational requirements of non-farm agricultural occupations. An effective supervised occupational experience program should be provided for students interested in off-farm agricultural occupations.

ESSLINGER, DONALD L. Kansas School Superintendents' Perceptions of the 4-H Club Program. Thesis, M.S., 1965, University of Maryland. 112 p. Library, University of Maryland, College Park.

Purpose. -- To determine Kansas school superintendents' perceptions of the 4-H Club program, their prior contact with the program, and their knowledge of its administration and financing.

Methods. -- A questionnaire was mailed to a random sample of superintendents in 20 per cent of the counties in Kansas. A total of 97 superintendents in 21 counties returned questionnaires. The questionnaire measured superintendents' prior contact with 4-H activities; knowledge of the program; and opinions of the importance, effectiveness, and value of the program. Chi square was used to determine the significance of differences between groups.

Findings. -- Ninety-six per cent of the school superintendents had had some contact with 4-H Clubs. However, nearly half had no knowldge of the sources of funds for or the administration of the 4-H Club program. They felt 4-H activities were valuable to youth in their communities but nearly half felt it was in conflict with school work for students' time and energy. With respect to superintendents' perception of 4-H Club work, there was no significance found in the relationship of their degree of contact with 4-H clubs and their perception of the program. Also, the presence or absence of 4-H Club agent in the county did not influence their perception of 4-H Club work. Superintendents in rural counties were found to be more receptive to the use of school facilities for 4-H project meetings than were superintendents in less rural counties.

The findings suggest that although relationships between 4-H Club programs and school superintendents were generally favorable, a more compatible relationship could result from efforts on the part of 4-H Club agents to keep school officials informed about Club programs including the activities and objectives.

GENTRY, GENE A. Mechanical Competencies Needed for Employment in Farm Machinery Sales and Service and Farm Supplies and Equipment Businesses in Five Maryland Counties. Thesis, M.S., 1966, University of Maryland. 132 p. Library, University of Maryland, College Park.

Purpose. -- To determine which mechanical competencies should be taught in high school vocational agriculture to prepare pupils for employment in farm machinery sales and service, and farm supplies and equipment occupations.

Methods. Data were collected by personal interviews with 25 randomly selected employers of farm machinery sales and service businesses and with 25 randomly selected employees of farm supplies and equipment businesses. One hundred and four competencies were rated either very desirable, helpful, or of little use according to their need by sales, skilled, and semi-skilled employees. Mean scores for competencies were ranked. Rank order comparisons made between employee groups.

Findings. Of 104 identified competencies, 72 were needed by employees in farm machinery sales and service, and 12 by employees in farm supplies and equipment occupations. Of 86 competencies used in another study to rate successful farmers in Maryland, 31 were found to be helpful or very desirable for employees in farm machinery businesses and 8 were helpful for employees in farm supplies and equipment businesses.

Sales, skilled, and semi-skilled employees in farm machinery businesses needed more mechanical competencies than did employees in the respective levels in farm supplies and equipment businesses. Limited numbers of competencies were needed by sales and semi-skilled employees in both occupational groups while extensive knowledge of mechanical competencies was needed by skilled employees.

It was concluded that with the exception of mechanical competencies, little similarity was observed between competencies needed for farming and those needed for employment in the selected agricultural occupations studied.

GUNDERSON, ORLEY D. An Analysis of Occupational Titles and Competencies Needed in Off-Farm Agricultural Supplies Businesses. Thesis, M.S., 1966, The Pennsylvania State University. 116 p. Library, The Pennsylvania State University, University Park.

Purpose. -- The objectives were (1) to identify and determine commonalities among occupational titles for entry and advancement in employment in two types of agricultural supplies businesses, (2) to identify, rate, and group the competencies needed To Enter and To Advance, and (3) to determine differences in levels of competency needed by employees To Enter and To Advance in each occupational group in cooperative and in independent agricultural supplies businesses.

Method. -- An interview schedule was used to determine ratings of agricultural and business competencies needed by workers in fifteen occupational titles. Data were collected by interview with 95 persons in ten cooperative agricultural supplies stores and with 63 persons in thirteen independent agricultural supplies stores. The businesses were selected to represent different store sizes and were widely distributed over the agricultural areas of Pennsylvania.

Findings. -- Factor analysis indicated that there were meaningful occupational title groups at both the To Enter and To Advance levels in the two types of agricultural supplies businesses. Service worker, salesman, office worker, and manager were groups of titles for both entry and advancement in employment in the cooperative stores. Salesman and office worker, equipment service worker, manager, and general service worker were groups of titles for both entry and advancement in the independent stores.

Factor analysis indicated that there were meaningful groups of competencies required of employees To Enter and To Advance in the two types of businesses. The competency factors were plant science, animal science, agricultural mechanics, business management and economics, employee traits and job responsibilities, and office skills and practices.

Competency factor scores were computed to determine differences in levels of competency needed To Enter and To Advance. The level of competency needed To Advance was higher than To Enter for all occupational groups in both kinds of agricultural supplies stores. Managers were found to require the highest level of competency both To Enter and To Advance in both groups of stores. Business competencies were required at higher levels by more occupational groups than were agricultural competencies.

Seventy-nine per cent of the employees interviewed in cooperative stores and 78 per cent of those in independent stores indicated that a farm background was most desirable for occupations in agricultural supplies businesses. It was recommended that further research be conducted in the area of occupational experience programs and that emphasis be given to supporting education among vocational fields.

HEANEY, DONALD S. Off-Farm Agricultural Occupations in Montana: Employment and Education. Thesis, D.Ed., 1966, The Pennsylvania State University. 186 p. Library, The Pennsylvania State University, University Park.

Purpose. -- (1) To identify present and emerging agricultural occupations, other than farming, for which vocational and technical education should be available, (2) to estimate present and anticipated numbers of employees, (3) to estimate annual turnover and entry opportunities, (4) to determine competencies needed for entry and advancement, (5) and to determine job characteristics.

Method. -- Data were obtained by personal interviews with managers in a random sample of 161 businesses in ten selected trade and service centers in Montana. The communities were selected on the basis of their importance as agricultural areas, number of high school vocational agriculture departments, geographical location, and size.

Findings. -- There were 1,127 businesses and services in the ten communities which hired employees needing agricultural competency. The individuals interviewed indicated 337 off-farm agricultural job titles within these businesses and services. The 1,127 businesses and services employed 21,854 workers of which 12,369 or 56.6 per cent needed agricultural competency. Of the 12,369 workers, 10,087 were full-time employees and 2,282 were part-time employees.

Three of the occupational families - Farm Supplies and Equipment, Farm Services, and Livestock and Poultry Industry - represented 65 per cent of the total number of businesses and 64 per cent of the employees. Skilled and semi-skilled levels of employment represented 85.5 per cent of the total number of employees needing agricultural competencies.

Employers expect to hire 8,428 employees during the next five years. Farm Supplies and Equipment, Farm Services, Livestock and Poultry Industry, and Ornamental Horticulture families account for 85.6 per cent of the employees to be hired in the next five years.

Factoring of the competency ratings to enter produced 12 competency factors. They were: Animal Science, Agricultural Mechanization, Forestry, Crop Science, Range Management, Agricultural Business Management, Farm Buildings, Soil and Water Management, Agricultural Chemicals, Rural Electrification, Forestry Management, and Animal Breeding and Selection. When the competency ratings were factored to advance they were found to be the same as to enter except for the last factor. A new factor, Lumbering Industry, was introduced in place of Animal Breeding and Selection.

HERNDON, LEO PRICE. Expectations of Selected Aspects of a Vocational Agriculture Program as Expressed at the Local School Level in New York State. Dissertation, Ed.D. 1966, Cornell University. 237 p. Library, Cornell University, Ithaca.

Purpose. -- To determine: (1) What local key people feel should constitute various selected aspects of a vocational agriculture program for the following: high school students, young farmers, adult farmers, and related agricultural occupations. (2) If differences in means of agreements were affected by: grouping respondents by class, enrollment size of the school district, or average farm income of the school district.

Method. -- A mailed survey was used to contact local key people of 178 schools offering vocational agriculture in New York State. Involved were the school administrator, the school board president, and two parents from each school. The survey instrument contained a general information section and a main section containing twenty-four statements about the various selected aspects of a vocational agriculture program. Respondents were asked to indicate their feelings or beliefs about each statement on a five interval scale of agreement.

Analyses were derived from 564 returns (79.2 per cent of survey forms mailed). Respondent classes by number and percent of possible returns were: school administrators, 165 (92.8 per cent); school board presidents, 127 (71.3 per cent); and parents, 272 (76.4 per cent).

The mean and standard deviation for each statement were computed for the following: all respondents combined, each class, low and high quartiles of enrollment, and average farm income of school districts.

Findings. -- The high school program should: (1) benefit both terminal students and students who plan further training in agriculture, (2) provide good general education, (3) be beneficial to students with agricultural vocations other than farming, (4) provide the knowledge, skills, and experience needed by those students who plan to enter farming, (5) offer supervised farming programs, (6) offer a broad course content based on the many types of farming in the area, and (7) not be restricted to the last two years of high school.

A young farmer program should provide instruction in agriculture including individual follow-up instruction.

No specific conclusions could be drawn for the adult farmer program. Means of responses were undecided with wide ranges of individual responses.

A program for off-farm agricultural occupations training should be provided and supervised farming experiences would be beneficial.

Although diversity existed, in more than ninety-two per cent of the comparisons made for effects of grouping respondents by class, enrollment size, or average farm income of the school districts, the means of agreement were separated by less than one-half of an interval.

HILL, C. W., BAIL, J. P., CUSHMAN, H. R., TOM, F. K. T., and PEARCE, F. C. Educational Needs of Beginning Dairy Farm Operators in New York, 1963. Staff Study, 1966, Cornell University. 36 p. Agricultural Experiment Station, Bul. 1008, New York State College of Agriculture, Ithaca.

Purpose. -- To determine among a group of beginning dairy farm operators; (1) the level of achievement with respect to selected business factors, (2) the patterns used in becoming established in farming, (3) the agricultural practices which should be modified, (4) the extent to which selected approved practices were adopted, and (5) the relative importance of problems.

Method. -- Key imformants in the 13 agricultural regions in New York identified a total of 2,260 beginning dairymen who had been farming at least one year but not more than seven years. A stratified random cluster sampling procedure was used to draw a 10 per cent sample from the 13 agricultural regions. A survey form was developed. A group of seven interviewers, all of whom had been former teachers of agriculture, individually contacted dairymen in the sample and recorded the data on the interview schedule. Out of 240 beginning dairy farmers who were interviewed, usuable data were obtained from 223.

Findings. -- The achievements of dairymen in the sample as measured by size of business and production of milk was much above the average for dairymen in the normative population. The average farm income was $5,000 with a range of $1,600 to more than $12,000 which indicates the great variations in income that existed among the respondents.

There was great variation in the use of standard and accepted agricultural procedures in dairy and crops production and in farm management activities. Certain practices, particularly in crop production and dairying, were more commonly used than those in management. Even so, one-third of the farmers did not use seven of the fourteen approved crop production practices.

A list of the common problems in the four areas of farm operation and management were identified by the farmers. These problems were ranked by dairymen in the sample in the order of importance. Among the 50 problems listed, 10 of the 20 most commonly mentioned problems were in farm management. Five of the 20 were in crop production, three were in farm mechanics, and two were in dairy husbandry. Of all the problems listed, the five most important were: increasing milk production, planning credit needs, marketing farm products, increasing soil productivity, and increasing the efficiency of the farm operation.

With respect to level of achievement in farming, agricultural procedures commonly used, number of approved practices not adopted, and number of problems identified, it is concluded that there is a great need for educational programs in agriculture for beginning dairy farm operators in New York. The researchers set forth a list of dairy farm problems in which beginning dairymen need education.

HOOVER, N. K., McCLAY, D. R., and STEVENS, G. Z. Off-Farm Agricultural Occupations in Pennsylvania -- Employment Opportunities and Technical Education Needs. Staff Study, Teacher Education Research Series, Volume 7, Number 1, 1966, The Pennsylvania State University. 36 p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose. -- To identify agricultural occupations and job titles in Pennsylvania and to estimate the present numbers of employees and annual entry opportunities; to identify the clusters of competencies and job titles associated with entry and advancement in off-farm agricultural occupations; and to determine characteristics of off-farm agricultural occupations for the purpose of developing technical education programs.

Method. -- A list of all businesses by counties was obtained from the Pennsylvania Department of Labor, Bureau of Employment Security. A committee, in each county, selected from the total list of businesses those that were thought to have employees who needed agricultural competencies and added ones not included in the B. E. S. list.

In 29 counties, a 33 per cent random sample of businesses was interviewed and estimates were based on the sample. These data were then used, through linear relationship, as a basis for estimating the number of off-farm agricultural employees in each of the other 38 counties. Factor analysis was used to identify the clusters of competencies and job titles.

Findings. -- (1) If persons to be hired during the next five years are to have some technical education in agriculture, each school presently offering agriculture will have to provide 12 graduates for full-time employment and 6 graduates for part-time employment per year; (2) Employers expect about a fourteen per cent increase in the number of employees needing agricultural competencies in the next five years. This parallels the anticipated expansion in the total labor force; (3) Three occupational areas -- Agricultural Supplies and Equipment; Livestock, Dairy and Poultry Products; and Ornamental Horticulture -- account for 74 per cent of the businesses, 73 per cent of the current employees needing agricultural competencies, and 71 per cent of the employees to be hired in the next five years. Of 163 job titles, 37 account for 75 per cent of new employees, not including professional workers, in the next five years; (4) Agricultural competencies needed are mainly determined by the products handled by the business. Many of the agricultural subjects taught to students preparing for production farming also will be needed by students who enter off-farm agricultural occupations; and (5) Salesmanship, human relations, and business management are competencies that are needed by all employees, but in varying degrees. There are many instances in which vocational agriculture may support, or be supported by, other vocational subjects taught.

JONES, MARIELLEN. A Longitudinal Study of Volunteer 4-H Leader Tenure in Maryland, 1961-65. Thesis, M.S., 1966, University of Maryland. 75 p. Library, University of Maryland, College Park.

Purpose. -- To determine whether 4-H leaders in Maryland who began in 1961 and who continued serving after that year differed in certain specific characteristics from leaders who discontinued their 4-H leadership roles before the fifth year.

Methods. -- Of 300 first-year leaders in June, 1961, 282 were interviewed in 1965 using a group interview technique. A comparison was made to determine the relationship of the selected characteristics, to continuation as a leader and length of tenure as a leader. Seventy-five, or 27 per cent of the 282 leaders interviewed in 1961, were still serving as leaders in 1965. A questionnaire mailed in June, 1965 to the leaders who had continued to serve for five years contained a number of the questions used in the original interview. Chi square was used for analysis of the data. Significance was established at the .05 level. When there was significance at the .01 and the .001 levels, it was reported.

Findings. -- Characteristics found to be related to longer leader tenure were: rural residence of leaders, leaders with larger numbers of children, leaders with children in a 4-H Club program, larger size of 4-H Club, equal proportion of boys and girls in the 4-H Club, members with rural residence, longer length of 4-H Club year, and larger number of meetings attended during the first year of leadership. The following characteristics were not signigicantly related to leader tenure: sex of the leaders, age of the leaders, education of the leaders, and previous participation of the leaders as 4-H Club members.

KEMP, PHYLLIS EILEEN. Professional Commitment of Home Economics Agents in Kansas. Thesis, M.S., 1965, University of Maryland. 83 p. Library, University of Maryland, College Park.

Purpose. -- To explore the professional commitment of home economics agents in Kansas and its relationship to job satisfaction, job effectiveness, and selected personal characteristics of the agents.

Method. -- All home economics agents in Kansas were surveyed with a 98 per cent response. Data collection instruments completed by the agents included: (1) a Measure of Professional Commitment (MOPC), (2) a Commitment Rating Scale, (3) a Job Satisfaction Blank, and (4) a Personal Data Sheet. Agents were also rated by the district supervisors on professional commitment and job effectiveness scales. The Z-test was used to compare the MOPC mean score of home economics agents with the score of teachers, graduate students, college personnel, and clerical workers. Pearson's product-moment correlation was used to determine relationships between the various combinations of self- and supervisor-judgements.

Findings. -- In regard to MOPC comparisons, a significant difference was found between the mean scores of home economics agents and clerical workers. Significant r-values were observed for the following comparisons: (1) the agents' job satisfaction scores and scores for the agents' judgement of commitment on both MOPC and Commitment Rating Scale, (2) supervisors' ratings of job effectiveness and professional commitment as shown by the Commitment Rating Scale, and (3) agents' and supervisors' ratings on the Commitment Rating Scale.

It was concluded that professional commitment had a significant relationship to the job satisfaction of the agents but had little relationship to the other variables in the study.

KIGER, GERALD M. A Follow-Up Study of Graduates of Lampeter-Strasburg High School. Thesis, M.Ed., 1965, The Pennsylvania State University. 43 p. Library, The Pennsylvania State University, University Park.

Purpose. -- The purpose of this study was to determine whether Lampeter-Strasburg High School is meeting the needs of its students and if it is adequately preparing them for their role in society. It determined changes that graduates of the school felt needed to be made if the school is to succeed in helping students meet their vocational goals.

Method. -- A questionnaire was mailed to the graduates of the classes of 1957, 1958, 1962, and 1963. The reason for using the classes of 1957 and 1958 was that these were the first two classes to be graduated from the new junior-senior high school resulting from the union of three smaller school districts. The classes of 1962 and 1963 were used so that the comparison between the two groups would represent a five-year span of time. Two hundred and ninety-two questionnaires were mailed to graduates. One hundred and seventy-one or 58.5 per cent of the forms were returned.

Findings. -- Eighty-four per cent of the graduates who returned completed forms indicated that the school had succeeded in providing them with an adequate educational background. Most of the graduates who indicated that they were not adequately equipped to progress in their vocational plans following graduation specified a need for most education in business. The failure of the graduates to get the education they needed was not due to a lack of subjects being offered but to their placement in or pursuit of the wrong courses.

KISHIMOTO, HONSAI. The Development of a Suggested Curriculum for Agriculture Teacher Education in the Ryukyu Islands. Thesis, M.S., 1966, University of Maryland. 104 p. Library, University of Maryland, College Park.

Purpose. -- To formulate a curriculum, and identify and describe specific courses in agriculture and professional education for the beginning teacher of agriculture in Ryukyu Islands.

Method. -- Agriculture education curriculums from twelve teacher education institutions in Japan and related data for the United States were reviewed. Courses were listed by subject and grouped into five categories: (1) general education, (2) technical agriculture, (3) professional education, (4) required electives, and (5) free electives. Data were reported as averages and percentages.

Findings. -- Total number of semester credits required to prepare teachers of agriculture at the twelve institutions ranged from 124 to 147 and averaged 131.4. Technical agriculture courses constituted 32.3 per cent of all courses in the curriculums studied. Other categories and the per cent of courses in the curriculums in each were as follows: general education, 27.4 per cent; professional education, 20.1 per cent; required electives, 10.5 per cent; and free electives, 9.7 per cent.

The curriculums suggested for the preparation of teachers of agriculture for the University of Ryukyus prescribed courses which should develop the agricultural knowledge, skills, and desirable attitudes needed by prospective teachers.

LAY, CHARLES FRANCIS. The Image of 4-H Work Among Adults in Two Urbanized Counties in Maryland. Thesis, M.S., 1965, University of Maryland. Thesis, M.S., 1965, University of Maryland. 122 p. Library, University of Maryland, College Park.

Purpose. -- To determine the image of 4-H Club work in urbanized areas as held by parents of 4-H Club members and by adults having no children in 4-H Clubs.

Methods. -- Personal interviews were held with 50 parents of 4-H Club members from two predominantly urban counties and with 64 adults chosen randomly from selected urban neighborhoods in the same counties. An interview schedule was designed to collect data concerning respondents' involvement, attitudes, knowledge, and awareness of 4-H Club progress, projects, and activities. Data were reported numerically and in percentages. Differences between groups were tested with chi square.

Findings. -- A majority of the adults had a good image of 4-H Clubs in that: Their attitude towards 4-H Clubs was generally favorable and was comparable to their attitude towards other youth organizations, they felt 4-H Club activities were beneficial to young people, and they either had or would let their children join 4-H Clubs.

Significant differences were observed between parents of 4-H members and adults with no children in 4-H Clubs. Parents of 4-H Club members expressed greater knowledge of and a more favorable attitude toward 4-H Club activities, and were more aware of the relationship of the Club to the Cooperative Extension Service, the objectives and membership requirements, and the programs, projects, and activities of 4-H Club work.

Adults of both groups considered 4-H Clubs primarily as a rural organization which urban youth could join. They were generally unaware that 4-H is supported by tax monies.

The findings indicate that favorable attitudes generally exist toward 4-H Club work among urban adults but that there is a need for promotional plans to better inform the urbanite of the functions of the 4-H Club program.

LEBO, CHARLES F. The Development and Evaluation of a New Reimbursement Affidavit for School Districts Reporting Vocational Agriculture Programs. Thesis, M. Ed., 1966, The Pennsylvania State University. 71 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To develop a new vocational agriculture reimbursement affidavit for Pennsylvania school districts. The form is for the use of local school districts for reporting reimbursement information required under existing Federal and Pennsylvania laws.

Method. -- A trial affidavit was developed by using information from twenty states to revise the Pennsylvania affidavit. Changes were made in content, design, and in mathematical computation. An evaluation instrument was designed to determine the attitudes and opinions of selected school administrators, teachers of agriculture, and area advisers concerning the trial affidavit.

Evaluation questionnaires, existing reimbursement affidavits, and trial reimbursement affidavits were sent to 25 school administrators, 25 teachers of agriculture and 18 area agricultural education advisers. Fifty-eight, or 85 per cent of the evaluation questionnaires were completed and returned.

Findings. -- School administrators, teachers of agriculture and area agricultural education advisers were in agreement in their comparison of the two affidavits. All were favorable to the content, design and mathematical computation components of the trial affidavit, thus, indicating their acceptance of it. All indicated that enough information had been included to insure the proper completion of the affidavit. The spacing used on the affidavit made it easier to complete than the existing affidavit.

A number of suggested changes or modifications were recommended as a result of the evaluations made of the trial affidavit. Many of these recommendations were incorporated into the final edition of the instrument.

LINDLEY, WILLIAM I. Estimate and Prediction of Persons Employed in Five Off-Farm Agricultural Occupation Areas by Counties in Pennsylvania. Thesis, M.S., 1966, The Pennsylvania State University. 55 p. Library, The Pennsylvania State University, University Park.

Purpose. -- (1) To locate factors related to the number of off-farm agricultural employees in 29 surveyed counties of Pennsylvania, (2) to use the factors to predict the number of current, full-time, off-farm agricultural employees, by counties, in the state of Pennsylvania, (3) to predict the number of off-farm agricultural employees currently working part-time, and the full-time and part-time workers to be hired during the next five years.

Method. -- The Pennsylvania occupations study provided an estimate of the number of off-farm agricultural employees in 29 counties. In this report the data from the Pennsylvania agricultural occupations study were used as a basis for the development of multiple regression equations to estimate the number of current full-time employees in five off-farm agricultural areas. It was necessary to find factors that had a positive, linear relationship with the number of workers needing agricultural competence. Seventeen factors, most of them data from state reports on the agricultural productivity of each county, were used in the regression equations. Part-time current employees, and full-time and part-time employees to be hired during the next five years were estimated from the ratio of those groups to full-time current employees in the 29 county survey.

Findings. -- (1) Seventeen factors were used as variables in multiple regression equations to estimate the current number of full-time employees with a satisfactory degree of accuracy. The fraction of explained variance for the equation for each of the five occupation areas was as follows: Farm Machinery, 0.880; Feed and Farm Supplies, 0.976; Livestock and Poultry, 0.907; Crops and Forestry, 0.694; Ornamental Horticulture, 0.959. (2) The actual number of businesses needing employees with agricultural skills and knowledge proved to be the factor most closely ralated to the number of workers. This variable was among the six most important factors in all five of the occupation areas. (3) There were an estimated 43,057 current full-time off-farm agricultural employees in the five occupation areas. Of the total, 10.2 per cent were employed in farm machinery occupations, 25.9 per cent were in feed and farm supplies occupations, 21.0 per cent were in livestock and poultry occupations, 11.2 per cent were in crops and forestry occupations and 31.7 per cent were in ornamental horticulture occupations. (4) In the more urban counties of the state, ornamental horticulture was found to employ half or more of the total off-farm workers needing agriculture knowledge and skills. Ornamental horticulture managers and owners of businesses stated that they would hire 1.6 times as many part-time workers as full-time employees during the next five years.

LOVE, EDWIN LAMAR. An Analysis of Job Titles and of Competencies Needed in Off-Farm Agricultural Occupations in Pennsylvania. Thesis, D.Ed., 1966, The Pennsylvania State University. 133 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To identify the clusters of competencies and job titles associated with entry and advancement in off-farm agricultural occupations and to determine differences in the levels of selected vocational competencies needed. The occupations areas were: agricultural mechanics, agricultural supplies, food products, forestry, and ornamental horticulture.

Method. -- Job interviews were made with a random sample of employers in seventeen Pennsylvania counties. Two random samples of 105 each were drawn from all of the job interviews. A sample of 105 job interviews was drawn from each of the five off-farm agricultural occupations areas. Competency factors for competencies needed To Enter and To Advance in off-farm agricultural occupations were determined by factor analysis with varimax rotation. An inversion of the data made possible the separate factoring of job titles in the random samples and in each of the five off-farm agricultural occupations areas. All data were analyzed for twelve competency and twelve job title factors. Competency factor mean scores were computed to determine differences in training needed To Enter and To Advance in each occupation group.

Findings. -- Job title factor groups To Enter and To Advance for manager, salesman, technician, and service worker were important job titles in the two random samples. The job title factor of manager was important in each of the five off-farm agricultural occupation areas. The job title group for salesman appeared in the To Advance factoring in the agricultural supplies area. The job title factor group for technician was important To Enter and To Advance in the occupation areas of agricultural supplies, forestry, and ornamental horticulture. A factor group for bookkeeper appeared in both To Enter and To Advance in agricultural mechanics and agricultural supplies. A factor group for mechanic was found in agricultural mechanics occupations.

The competency factors in agriculture were plant science, animal science, agricultural mechanics and agricultural business management. Among business and distributive competencies the factor groups were business management and economics, sales and business skills, job and employee characteristics, and employee-supervisor relations. In trade and industrial competencies the factor groups were building construction technology, industrial mechanics, industrial quality control, and electricity and electronics.

MARTIN, NED AUGUSTUS. The Method And Combination of Devices or Techniques Used By Teachers in Developing the Most Satisfactory Supervised Farming Program. Thesis, M.S., 1965, West Virginia University. 50 p. Library, West Virginia University, Morgantown.

Purpose. -- To investigate and evaluate different plans which teachers of vocational agriculture used to achieve the objectives and goals of the supervised farming program and to determine from these findings which were the most satisfactory.

Method. -- Data for the study were collected by means of a questionnaire directed to one hundred vocational agriculture teachers in West Virginia. Personal interviews were conducted and an investigation of the literature was done.

Findings. -- Pupils, parents, and landlords must receive some basic information on the possibilities and limitations of supervised farming programs before or at the very beginning of the school year to avoid misunderstandings and conflicts later. Contests that result in awards have definite values when they are carefully planned and when sound judgment is used in establishing the proper amount of time to be used in preparing for the contests.

Before embarking on an enterprise, the student should submit plans consisting of a course of action, budget, agreements, and parental approval. Records of his enterprise should be kept and evaluated. The students will develop these competencies through instruction received from his vocational agriculture teacher.

Techniques to stimulate and motivate interest should be chosen to fit the particular situation. Where they can be adapted, field trips, visual aids, on-farm instructional visits, individual counseling, parent-pupil-teacher conferences, demonstrations, and group discussion are often effective means of creating and holding interest. Careful supervision is a necessity if the project program is to be financially and educationally rewarding.

A well planned publicity program is essential in creating understanding and support. The most effective instruction is based on the activities and problems related to the development of supervised farming program. The most important motivating factor in a worthwhile farming program is the teacher. Financing should be investigated and made available for those students who need it, to develop their supervised farming program.

MASLEY, P. T. The Development of a Curriculum for Non-Farm Agricultural Employment in Connecticut. Staff Study, 1966, University of Connecticut, 60 p. Connecticut State Department of Education, Hartford.

Purpose. -- To ascertain non-farm agricultural employment opportunities in Connecticut and to identify distributions of these occupations or job clusters which have potential with regard to curriculum development in vocational agriculture.

Method. -- The study was based on data obtained by paid interviewers from 480 firms. The firms were located in forty-three randomly selected towns representing twenty-five per cent of the state population.

Findings. -- In the 480 firms interviewed, 3,475 full time, 1,081 part-time employees, and 290 job titles were identified. Employers in the firms indicated anticipated employment in the next five years of 1,064 full-time and 1,089 part-time employees.

Occupational data pertaining to the development of programs for high school youth are favorable in most cases with regard to age and educational requirements, work experience, residential background, and proficiency in agriculture. The employment prospects for high school youth and adults are good in non-farm agricultural occupations in Connecticut. A variety of curriculums can be developed for high school pupils and adults for many of the non-farm agricultural occupations identified.

MERRITT, EDWARD HOWES. An Analysis of the Citizenship Short Course Programs Conducted by the National 4-H Club Foundation, 1962. Thesis, M.S., 1966, University of Maryland. 102 p. Library, University of Maryland, College Park.

Purpose. -- To determine how the 1962 Citizenship Short Course participants were trained, how they saw the total CSC program, and what application they made of their training at home. To compare the CSC programs with county and community 4-H citizenship training methods. To determine the extent of specific preparation the participants received. To have CSC participants rate the importance of various aspects of the program. To obtain the participants' impressions of the CSC program as a citizenship training device.

Methods. -- Data were obtained on three questionnaires mailed to the participants. Several hypotheses were tested with chi square.

Findings. -- Specific orientation in several areas is necessary to secure maximum benefits; more than half of the 4-H members participating had received no specific training in citizenship. Several recommendations were made by the author in reference to needs for orientation.

The 4-H members wanted more time for field trips and for discussion periods. Members reported their experiences to 4-H and other groups. The CSC programs sparked their interest in learning more about government at levels and initiated better understanding and appreciation of the members' personal citizenship responsibilities.

The CSC program does meet a very definite need in strengthening the total 4-H citizenship education effort. It is meeting its objectives, but can become a more effective program through incorporating changes based on some of the findings of the study.

NOAKES, HAROLD L. A Survey of Student Interests in Five Agricultural Occupation Groups in Twelve New York School Districts. Staff Study, 1965, New York Education Department. 31 p. Bureau of Agricultural Education, State Education Department, Albany.

Purpose. -- The purposes of the study were (1) To provide data relative to student interests in agriculture and (2) to supplement occupational data as a basis for planning area programs in agricultural education.

Method. -- All students in grades 8, 9, and 10 in twelve New York school districts were requested to complete a questionnaire surveying their interests in agricultural activities and their preference for occupational families in agriculture. The five occupational areas were: (1) Agricultural Machinery and Mechanics, (2) Agricultural Sales and Service, (3) Farm Work, Operation, and Management, (4) Ornamental Horticulture, Landscaping, and Floriculture, and (5) Conservation, Forestry, and Campsite Activities. A total of 3,611 students or 93 per cent of the students surveyed completed questionnaires.

Findings. -- A large number of students is interested in enrolling in agricultural courses if a variety of courses are available. Over 38 per cent of the 3,611 students studied indicated an interest in one or more occupational groups in the broad field of agriculture. Male students preferences for occupational groups were as follows: (1) Conservation, Forestry, and Campsite Activities, (2) Agricultural Machinery and Mechanics, (3) Farm Work, Operation, and Management, (4) Ornamental Horticulture, Landscaping, and Floriculture, and (5) Agricultural Sales and Service. Female students preferences were: (1) Ornamental Horticulture, Landscaping, and Floriculture, (2) Conservation, Forestry, and Campsite Activities, (3) Farm Work, Operation, and Management, (4) Agricultural Sales and Service, and (5) Agricultural Machinery and Mechanics.

PARK, EUGENE K. Employment Trends of Agriculture Graduates, Penns Valley High School, Spring Mills, Pennsylvania. Thesis, M. Ed., 1966, The Pennsylvania State University. 50 p. Library, the Pennsylvania State University, University Park.

Purpose. -- To determine the percentages of two groups of graduates of the Vocational Agriculture Department, Penns Valley High School, Spring Mills, Pennsylvania, which were employed in each of five types of occupations, and to determine if any trends had developed in the types, sequences, and tenure of employment within the various occupations.

Method. -- Employment information sheets were mailed to 141 graduates (1950 - 1963) of the Vocational Agriculture Department of Penns Valley High School. Reminder cards were sent to those who did not reply within three weeks. For comparison purposes, two groups of graduates were established: Group I, 1950 - 1956; and Group II, 1957 - 1963. Two periods of time were used so that the two groups could be compared. Period 1 was from June 1950 to March 1958 and Period 2, from June 1957 to March 1965.

When employment histories were received, each job was classified into one of five types of occupations--farming, farm services, off-farm agriculture, non-agriculture, and military service. Percentages of graduates employed in the five occupation categories were arranged in table form. Job sequence diagrams were drawn for both Group I and Group II to show occupations held by graduates in each job sequence. Employment summary tables were formulated to show the number of graduates employed in each of the five types of occupations for jobs held in sequence one through eight. The number of persons employed, the range of time the jobs were held, and the average tenure for the jobs may be compared by type of job or by the sequential position of the jobs within the employment careers.

Findings. -- This study showed more graduates in farm services and off-farm agriculture than have previous studies. More Penns Valley graduates enter farming for their first job than the other four types of occupations combined. Group II had a higher percentage in farming and military service and a lower percentage in non-agriculture jobs than did Group I. Military service appeared to be only a temporary interruption to the type of work graduates followed.

Seventy-nine percent of the graduates in Groups I and II followed a type of employment similar to their first or second job throughout their employment history. The type of occupation and the position of the job in the sequence made very little difference in the average tenure for Group II, but for Group I, the tenure varied considerably with the position of the job in the sequence.

REICHARD, GERALD W. An Evaluation of Measured and Stated Interests in Agriculture of Eighth Grade Boys in Franklin County, Pennsylvania. Thesis, M.Ed., 1966, The Pennsylvania State University. 66 p. Library, The Pennsylvania State University, University Park.

Purpose. -- (1) To inventory interests and other personal and environmental characteristics of eighth grade boys, (2) to determine relationships among interests and characteristics of all boys and of those who plan to elect agriculture in high school, and (3) to show how information about students, courses offered, and employment opportunities may be used in guidance and counseling.

Method. -- The Vocational Agriculture Interest Inventory and the Kuder General Interest Survey, Form E, were administered to 862 eighth grade boys in the ten high schools in the Franklin County Vocational-Technical School attendance area in November, 1965. The student survey form printed on the back of the answer sheet of the Vocational Agriculture Interest Inventory provided the information on personal and family characteristics and student plans. Nine hypotheses were tested at the .05 level.

Findings. -- The mean Vocational Agriculture Interest Inventory score of 41.9 for all students was lower than the 52.1 mean score of the norm group in twenty smaller schools in 1960 on which the test was constructed. The Kuder General Interest Survey, Form E, mean scores on the Persuasive and Clerical scales were higher than for the national norm group; and the Musical mean score was lower. The Outdoor scale of the Kuder correlated .639 with the Vocational Agriculture Interest Inventory. The fraction of explained variance was .409 for this one variable alone; with all ten scales of the Kuder included the variance accounted for was .439.

The Vocational Agriculture Interest Inventory scores of boys from families living on farms and engaged in full-time farming were higher than the scores of boys from part-time farming or non-farming and urban families. Scores of boys planning to enter an agricultural occupation and of students intending to elect agriculture in high school were significantly higher than scores of other boys.

There were 168 eighth grade boys who expressed an intention to elect agriculture in high school, 76 of whom were from families engaged in full-time farming or part-time farming. The Franklin County area has agriculture employment opportunities for more persons than are being graduated with training for agricultural production or off-farm agricultural occupations.

RHODES, CHARLES IRVIN. An Investigation of Certain Socio-Economic Factors Which May Influence Vocational Objectives of West Virginia Vocational Agriculture Students. Thesis, M.S., 1966, West Virginia University. 112 p. Library, West Virginia University, Morgantown.

Purpose. -- To determine the occupational objectives of a randomly selected sample of West Virginia vocational agriculture students, (2) to determine the vocational values of these students, and (3) to test for associations between these objectives, values, and other socio-economic factors.

Method. -- Data for the study were collected by means of a survey instrument administered to 683 randomly selected vocational agriculture students in West Virginia. Results of the survey were processed by the West Virginia University Computer Center. Chi square was used to test the significance of association between treatment variables.

Findings. -- (1) Age of the student was not associated with the occupational objective of the student. (2) There was no association between grade in school and the boys' indicated vocational goal. (3) Association was not established between years in Vo-Ag and occupational objective. (4) There was an association between plans to attend college and occupational objectives. More of those planning to attend college had forestry or agriculture service objectives than other students. (5) An association was established between occupational objectives and plans to become a part-time farmer. More students than was expected planned to be part-time farmers, and listed the livestock and poultry industry as their occupational goal. (6) West Virginia and California Vo-Ag students placed similar amounts of importance on the various values. Having an interesting job was most important and being boss was least important to both groups. (7) Students whose occupational objective was farming, agricultural service or forestry, or who were undecided about an occupation seemed to feel that high salary was less important than other objectives. (3) There seemed to be no association between occupational values, other than high salary, and occupational objectives. (9) Boys whose fathers were full-time farmers tended to select farming, livestock and poultry industry, or agricultural service as their occupational goal. (10) Sons of non-farmers were more apt to have non-agricultural objectives than sons of farmers or part-time farmers. (11) Sons of men with off-farm occupations tended to indicate farming, or wildlife and recreation objectives. (12) If the father's off-farm occupation was non-agricultural, the sons tended to have non-agricultural objectives. (13) There seemed to be no association between the amount of time the mother worked outside of the home and the occupational values of the son. (14) As the father's age increased, boys tended to select farming as their vocation. (15) There was no association between years of school completed by the father and the son's occupational objective. (16) An association existed between years of school completed by the mother and the son's selected goal. As the number of years of school completed by the mother increased, boys tended to give farming, agricultural service, or forestry as their objective. Boys were less undecided about their occupational goals with increased amounts of schooling by their mothers. (17) Sons of farm owners or managers tended to select farming as their occupational goal. (18) Sons of farm laborers seemed to select livestock or poultry farming as their objective more often than other students. (19) Sons of renters showed a tendency to select wildlife and recreation more often than other students. (20) Boys from dairy farms tended to select farming as their occupational objective. Boys from livestock farms selected the livestock and poultry industry more often than expected. (21) Students from poultry farms were apt to select wildlife and recreation more often than expected.

SANTOS, SEVERINO R. Factors Associated With Successful Candidacy in Certain Fields of Graduate Study. Dissertation, Ph.D., 1966, Cornell University. 105 p. Library, Cornell University, Ithaca.

Purpose. -- The objectives of this study were: (1) to determine what constitutes success in graduate candidacy based on the opinion of a panel of professors; (2) to describe the students in certain fields at Cornell according to the degree of success they attained in graduate candidacy, certain selected factors which might be related to success in graduate candidacy, and graduate grade point average; (3) to determine which among the selected factors are associated with success in graduate candidacy in certain related social science fields; and (4) to find out how success in graduate candidacy as described by the panel of professors related to graduate grade point average.

Method. -- This study included 179 graduate students who were candidates for either a master's or a doctorate degree, in the areas of Farm Management, Rural Sociology, Extension Education, and Agricultural Education.

The following methods and procedures were employed in the study. (1) A selected panel of professors was asked by questionnaire what they considered to be the most dependable criteria for determining success in graduate candidacy. (2) Weights were determined for each of the criteria developed from the opinions of the professors to make possible the calculation of a numerical "success score" for each candidate. (3) Advisors were asked to rate their respective students on the criteria for success. A success score for each student was derived from these ratings. (4) The students were categorized into groups according to the university from which their undergraduate degrees were obtained, area of study, and degree pursued. (5) The means and standard errors of the scores of the students on the different variables under study were calculated. (6) Correlation coefficients were calculated for success scores and scores on each of the factors, and for success scores and graduate grade point average. (7) Correlation coefficients were tested for significance at the 1 and 5 per cent levels.

Findings. -- (1) According to the panel of professors the criteria for determining success in graduate candidacy with their relative importance, expressed in weights were: ability to think critically and analytically, 10; knowledgeability, 3.6; ability to do research, 3.3; creativity, 3.3; ability for self direction, 2.8; degree of motivation, 2.4; performance in course work, 1.8; and skill in communication, 0.7. (2) The means and standard errors of the scores of the students on the variables studied were: success score, 192.4 $\pm$ 46.0 (highest possible score was 282.0); age upon enrolling for graduate study at Cornell, 32.4 years $\pm$ 8.1; recency of last formal schooling, 5.5 years $\pm$ 8.1; duration of employment after baccalaureate degree, 6.4 years $\pm$ 8.1; ratings given by recommenders, 7.2 $\pm$ 1.3 (likely to be above average); undergraduate grade point average, 2.7 $\pm$ 1.3 (good or above average); Miller Analogies Test scores, 40.5 $\pm$ 15.2 (Rural Education majors only); graduate grade point average, 83.9 $\pm$ 4.0. (3) Ratings given by recommenders and undergraduate grade point average were significantly correlated with success in graduate candidacy for all the students and for nearly all the groups of students at least at the 5 per cent level of significance. Other factors correlated with success only in specific groups. (4) No significant correlations were found for the doctoral students and for those who earned their undergraduate degrees in American colleges and universities other than Cornell. (5) Graduate grade point average and success score were significantly correlated at the 1 per cent level of significance.

SHEAFFER, JAMES A. Horticultural Sales Occupations Task Analysis. Paper, M.Ed., 1966, Rutgers - The State University. 54 p. Department of Vocational-Technical Education Library, Rutgers - The State University, New Brunswick.

Purpose. -- To determine the tasks performed by entry level salespersons in produce departments, garden centers, roadside markets, and flower shops. To develop a horticultural salesperson course of study.

Method. -- The observational sample survey method was utilized to gather data on tasks, employment conditions and requirements, and qualities desired of employees. Salespersons in seven horticultural business establishments were observed in the performance of their daily tasks. The most obvious question raised by the task analysis was the feasibility of training for the four kinds of salespersons occupations simultaneously and with the same course of study.

Findings. -- (1) The florist business lends itself to the apprenticeship concept. It requires persons with artistic ability. (2) The produce clerk appears to be the least difficult occupation for which to train persons. Produce departments lend themselves to classroom simulation. (3) Employment in roadside markets would appear to have little in its favor as a career, except as a family-owned operation or with other opportunities for future ownership. (4) The garden supply market salesperson occupation appears to be the most difficult of the four in which to train persons. An entry level employee must possess a wealth of product information. Much of his work is in the form of advice to customers.

STAUFFER, ROBERT HARRY. Learning Orientation Priorities of Cooperative Extension Clientele in Selected Pennsylvania Counties. Thesis, D.Ed., 1966. The Pennsylvania State University. 74 p. Library, The Pennsylvania State University, University Park.

Purpose. -- The study was designed to test the Houle theory that adults have three orientations toward learning: the goal, the activity, and the knowledge orientations. The theory had been developed from an intensive study of taped interviews with 22 unusually active, or intensely involved, adult learners. This study focused on a larger group of adults. The purpose was to determine learning orientation priorities of men and women who attended agricultural and home economics meetings of Cooperative Extension.

Method. -- Sheffield developed a schedule to test the Houle theory with 453 conferees in a residential adult education environment. The scaled learning-orientation items in the Sheffield schedule were revised and eight items were added. Demographic factors included were age, sex, years of formal education, occupation and degree of participation. The schedule was administered to 704 adults in attendance at 32 Cooperative Extension meetings in 16 Pennsylvania counties. Statistical treatment included factor analysis, correlation, and analysis of variance.

Findings. -- Three primary learning orientations found among Cooperative Extension clientele were knowledge, affiliation, and occupation. Individuals with a knowledge orientation sought intellectual satisfactions through learning. Affiliation-oriented individuals sought personal associations and friendships. Adults with an occupation orientation sought vocational competency and guidance to secure professional advancement. The knowledge orientation was related to the knowledge orientation described by Houle. The affiliation orientation was related to Houle's activity category. The goal orientation developed by Houle was not as specific as the occupation category of this research.

Alleviation, civic altruism, and insight were secondary learning orientations. Adults with an insight orientation engaged in discussion of ideas and acquisition of understanding of basic concepts. The alleviation orientation can be compared with the need-for-activity and desire-for-activity orientations developed by Sheffield. Civic altruism is related to the personal goal and societal goal orientations of Sheffield. The insight orientation was not described by Houle or Sheffield.

The occupation orientation had higher priority among men than women. The older clientele attended meetings for affiliation reasons and to alleviate boredom and frustration. Homemakers desired knowledge and association with others. Farmers were interested in occupational improvement. Manager-professionals, sales and service personnel, and young adults who had acquired higher levels of formal education considered knowledge and occupational improvement to be the important reasons for attending Extension meetings.

STEINER, ROBERT J. Factors of Format and Content in Brochures Which Influence a Student's Choice of a College of Agriculture. Thesis, M.S., 1966, University of Rhode Island. 69 p. Library, University of Rhode Island, Kingston.

Purpose. -- (1) To identify the format and content factors considered important by prospective college students from metropolitan areas in selecting careers in the field of agriculture and (2) to develop recommendations for a brochure which would adequately describe educational opportunities available in undergraduate agriculture curriculums at the University of Rhode Island.

Method. -- Letters were mailed to seventy colleges of agriculture requesting copies of descriptive information disseminated to prospective students. The investigator personally surveyed a group of eighty Rhode Island high school seniors from eight schools having vocational agriculture curriculums. Five boys in the agriculture group and five boys in the academic group were asked to rank in order of preference four items in each of twenty visual exhibits dealing with the following factors of brochure format and content: type of cover, content, printing, kinds of photographs, size, shape, and thickness of publication.

Findings. -- The results of this study indicated that both groups preferred the same factors of brochure format and content. Student preferences supported observations and trends revealed by the mail survey and the findings of other publication studies.

An analysis of the observations made by prospective students after viewing the twenty visual exhibits revealed that: color is important in cover, content, and printing; curriculum descriptions, career possibilities, and informative college scenes are essential; and size, shape, and thickness are not influential factors.

Based upon these identified factors, the following recommendations were developed for a College of Agriculture brochure at the University of Rhode Island: (1) the use of an attractive cover, utilizing color, (2) clear, informative illustrations which depict various phases of college life, (3) generalized publication with interesting, explicit, curriculum descriptions, (4) liberal use of color in printing, and (5) size may vary from 4 x 9 inches to 8½ x 11 inches.

Recommendations which appear to be pertinent for further study include: a survey of student opinion concerning additional factors of economic status, background, scholastic standing and high school offereings affecting college choices, and the use of an exhibit review panel and a readability rating scale.

SULLIVAN, DOROTHY D. and CARDOZIER, V. R. Integrating Reading Instruction into Vocational Agriculture Classes. Staff Study, 1966, University of Maryland, College Park. 24 p. Agricultural Experiment Station, University of Maryland, College Park.

Purpose. -- To determine the impact of special reading instruction, when integrated into the teaching of agriculture, on improved reading ability and increases achievement in subject matter.

Methods. -- A simple classical design experiment was developed including twelve randomly assigned schools in Maryland. Two schools, one experimental and one control, were selected from each of six major cultural areas of the state.

The level of reading ability of students in vocational agriculture was ascertained by use of Diagnostic Reading Tests, Survey Section. Participants were pre-tested with the Kuhlman-Anderson Intelligence Test, and the Science and Social Studies Tests of the Sequential Tests of Educational Progress. Two units of study were taught, with the experimental groups following improved reading guide procedures. Post-testing was conducted at intervals of three and six months after instruction. F tests were used to determine significant differences between groups.

Findings. -- Reading abilities of students in the study were well below national norms both in speed of reading and in vocabulary with nearly half averaging two years below their class level in overall reading ability. With respect to statistical treatment of experimental and control group data, there were no significant differences between groups in performance on reading, social studies, and standardized science tests using class means as the unit of measurement. However, when individual subject means were considered, differences between experimental and control groups were significant on both pre-test and post-test scores in reading and social studies, and on post-test scores in science.

Teachers' responses to the experimental procedures suggested that the teaching guide may have merit if revised to a shorter and more compact form. It was concluded that some kind of remedial action is essential if students are to profit most from their agricultural instruction, but this experiment suggests further research should be undertaken to improve the teaching guide.

WILLIAMS, KARL EDWARD. A Study in Determining Vocational Education Needs of Employees of the Ornamental Horticulture Industry in Kanawha and Boone Counties with Implications for Developing A Course of Instruction Designed to Train for Supervised Occupational Experience and Placement. Problem, M.S., 1966, West Virginia. 60 p. Library, West Virginia University, Morgantown.

Purpose. -- To determine: (1) the current employment force, (2) anticipated employment force five years hence, (3) the ornamental horticultural competencies needed by present and anticipated employees, (4) the opportunities available for providing work experience, and (5) the instructional areas needed in a high school oriented program for preparing workers in the ornamental horticulture industry. To draw conclusions and develop a course of instruction designed to train individuals for placement in ornamental horticulture occupations.

Method. -- A questionnaire and letter of explanation were sent to thirty-five agencies of the industry. A total of twenty-two agencies answered the request. A follow-up, personal interview was used occasionally to obtain the opinions of agency managers and to collect more complete data about the industry.

Findings. -- In the next five years, the twenty-two ornamental horticulture agencies expect an increase of seventy-four employees, 70.3 per cent of whom must possess knowledges and skills of the occupation prior to placement.

In a listing of fourteen suggested categories of training, the agencies indicated employees will need a comprehensive knowledge of soils; fertilizers; identification and classification of plants by life cycles; plant propagation; and packaging, displaying, selling and sales management. In addition, other areas of training were needed which totaled approximately 277 hours of instruction.

The personnel surveyed and interviewed felt occupational work experience should be an integral part of the program. They were willing to cooperate by providing one hundred hours of such training during the spring and fall months. A suggested course of study was developed for implementing a program in ornamental horticulture.

WOLFF, FRANK J. and GRADONI, E. JOHN. Employment Opportunities and Competencies Required for Entry in Selected Occupations in Agricultural Businesses in Three Communities in New York State. Staff Study, 1964, New York Education Department. 17 p. Bureau of Agricultural Education, State Education Department, Albany.

Purpose. -- To survey agricultural business employers regarding competencies needed by workers entering agricultural business occupations. To learn the nature and extent of the occupational opportunities to guide the development of courses of study for new programs in agricultural business.

Method. -- Data were collected in three of twelve communities outside the large cities where both teachers of agriculture and distributive education coordinators were employed. The three communities were selected because of the interest of the teachers and coordinators in the project. In each community the teacher and the coordinator selected a minimum of 20 agricultural businesses. Working together, they interviewed a responsible individual in each business. A simple survey instrument was used to determine, by jot title (1) the numbers of full-time and part-time employees, the level of employment, and the estimated numbers of permanent replacements needed annually, (2) the numbers of employees, both full-time and part-time who were classified as permanent or temporary (seasonal) workers, and (3) the desired qualifications for entering each occupation.

Findings. -- Fifty-seven firms and/or agencies, representing 24 different types of businesses and covering seven agricultural occupational families were included in the sample. The percentages of full-time workers found, by occupational family are: agricultural machinery sales and services, 12.2 per cent; agricultural supplies and equipment, 28.3 per cent; dairy manufacturing, processing, and sales, 12.5 per cent; other agricultural sales and services (not elsewhere classified), 8.3 per cent; ornamental horticulture production, sales, and service, 11.4 per cent; food products production, processing, and wholesaling, 21 per cent; and retail food sales, 6.3 per cent.

The majority of part-time workers were found in the latter three occupational families. The percentages of full-time workers by major grouping, Dictionary of Occupational Titles, were as follows: professional and managerial, 30.5 per cent; clerical and sales, 20.4 per cent; service and agricultural, 16.7 per cent; skilled, 8.3 per cent, and semi-skilled and unskilled, 24.1 per cent. The majority of part-time workers were found in the service and agricultural category. Thirty-eight employers who hired sales workers ranked the following three personality traits most frequently as being desired of applicants: (1) ability to meet the public, (2) good attitude, and (3) good personal appearance. The three most frequently mentioned competencies were: (1) knowledge of farm products and/or of agricultural marketing procedures, (2) knowledge of farming operations, and (3) the ability to "sell".

ZIEBER, KENNETH W. An analysis of the Problem of Overfeeding and Underfeeding Cows in the Herds of Eighteen Dairymen Studying Dairy Cattle Nutrition. Thesis, M. S., The Pennsylvania State University. 35 p. Library, The Pennsylvania State University, University Park.

Purpose. -- To survey and make comparisons of the dairy feeding practices of young adult farmers attending two dairy cattle nutrition classes. To determine if cows were being overfed and underfed digestible protein (DP) and total digestible nutrients (TDN) during the first, second, and third 100 days of their lactation.

Method. -- Eighteen diarymen were selected from two young adult farmer classes. Three cows were randomly selected from the herd of each dairyman, one each from all producing cows in the first, second, and third 100 days of their lactations. Cows not in normal health or in "heat" were eliminated. A record was made of necessary information about each cow to calculate her needs for DP and TDN. Feeding practices were recorded. All forages were chemically analyzed to estimate the content of DP and TDN. The DP and TDN requirements of each cow were computed. Comparisons were made between the nutrients required and nutrients received. A cow receiving more or less nutrients than she needed was overfed or underfed, respectively.

Findings. -- For the cows included in the study, DP was fed at approximately the required level during the first 100 days of lactation, and at a rate significantly higher than required during the second and third 100 days of lactation. Cows in the first 100 days of their lactation were underfed at a rate of 1.77 pounds of TDN per day but the difference was insignificant by correlated t-test. During the second 100 days of their lactation, cows were overfed at a rate of 1.82 pounds of TDN per day but again the difference was insignificant. TDN was fed at a rate significantly lower than required during the third 100 days of the lactation period.

Non-DHIA cows were significantly overfed DP during the second 100 days of their lactations and significantly underfed TDN during the third 100 days of their lactation.

Grain and hay appeared to be equally good sources of DP. Grain and silage appeared to be equally good sources of TDN. Half of the eighteen dairymen were lead-feeding, seventeen provided cows free-access to water, seven fed salt free-choice, three fed minerals free-choice, all fed salt in the ration, and seventeen fed minerals in the ration.